REMARKS

Claims 1-39 are all the claims presently pending in the application.

It is noted that Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 4 and 31 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. Although not necessarily agreeing with the Examiner's position, Applicants have amended these claims as suggested by the Examiner in an effort to expedite prosecution and request that the Examiner reconsider and withdraw this rejection.

Claims 23, 25, 27, 29-30, 32, 35, and 36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over US Patent 7,213,234 to Below et al, further in view of newly-cited Abran ("Field Studies Using Functional Size Measurement in Building Estimation Models for Software Maintenance").

Claims 1-8, 21, 22, 37, and 39 stand rejected under 35 U.S.C. §103(a) as unpatentable over Ramil et al., "Cost Estimation and Evolvability Monitoring for Software Evolution Processess", further in view of Below and further yet in view of Abran.

Claims 9-20 and 38 stand rejected under 35 U.S.C. §103(a) as unpatentable over Below, further in view of Ramil.

Claims 24, 26, 28, 31, 33, and 34 stand rejected under 35 U.S.C. §103(a) as unpatentable over Below, further in view of Abran, and further yet in view of Ramil.

Applicants again respectfully traverse these rejections, since there is no discussion in any of the cited references to categorize the samplings into *N* categories of complexity.

That is, although newly-cited Abran arguably discusses a categorization into a plurality of levels of difficulty, this categorization of difficulty is for an entire project, not for samples of code within a project, as would be required to satisfy the plain meaning of the claim language of even the independent claims. Nor does Abran use difficulty categorization in an actual calculation of cost, since the categories of difficulty were actually used as a variable in describing accuracy of the various cost models, an entirely different concept from that of using categories as a variable within a cost model used to estimate cost for a larger portion of the code than the sampled portion, as is clearly required by the plain meaning of the language of the claimed invention.

I. THE CLAIMED INVENTION

As exemplarily described in, for example, independent claim 1, the claimed invention is directed to a method of estimating a cost related to at least one of computer software development, computer software maintenance, and information technology services. A sample of computer code is read in accordance with a sampling technique and <u>at least one sampling is categorized</u>. A cost for a larger subset of the computer code from the sampling is calculated. At least one of the reading, the sampling, and the calculating is executed on a computer.

As explained beginning at line 4 on page 3 of the specification, estimating costs for modifications to existing software, such as porting, as well as other activities related to existing software such as maintenance, application portfolio management, and legacy transformation of software, typically requires a comprehensive investigation including scanning the entire set of code to look for potential problems. This comprehensive approach can be very expensive and time consuming.

The claimed invention, on the other hand, teaches a novel method to estimate such costs by deriving a cost estimate using a sampling of the code.

II. THE PRIOR ART REJECTIONS

The Examiner alleges that Below, when modified by newly-cited Abran, renders obvious claims 23, 25, 27, 29-30, 32, 35, and 36 and that Ramil, when modified by Below and further yet by Abran, renders obvious claims 1-8, 21, 22, 37, and 39, and Below, when modified by Ramil, renders obvious claims 9-20 and 38, as well as claims 24, 26, 28, 31, 33, and 34.

Applicants again respectfully disagree, since there is no suggestion in any of these cited references that teach or suggest <u>categorization</u> of the <u>sampled source code</u> into categories of complexity, let alone the calculation of an estimated cost based on categories of complexity, such as described in the equation defined in dependent claims 4 and 31.

The Examiner newly cites Abran as allegedly demonstrating this element of the claimed invention. However, even if the levels of difficulty discussed in Abran were to be considered similar to the level of complexity used in the claimed invention, there are still differences between even the independent claims and the combination urged by the

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Examiner, so that the rejection currently of record <u>fails to provide a *prima facie* obviousness rejection</u> for even the independent claims, let alone the specific equation described in dependent claims 4 and 31, since there is at least one element that has not been demonstrated by this combination.

Indeed, because the academic study reported in Abran has little to offer in reconciling the differences conceded by the Examiner for the prior art evaluation, it is difficult to conclude anything other than that this newly-cited reference actually demonstrates that the claimed invention is <u>non-obvious</u> over the cited references, as follows.

First, relative to the claimed invention, the difficulty levels of Abran are related to an <u>overall</u> project, as subjectively described <u>after the project has been concluded</u>. In contrast, the claimed invention is directed to <u>categories of complexity</u> of samples <u>within</u> a larger sample and as a part of objectively deriving an estimate, potentially even <u>before the project is started</u>.

Even if the "difficulty levels" of Abran were to be considered to at least in some way correlate with "levels of complexity" of the claimed invention, the Examiner would have the initial burden to demonstrate a motivation to somehow convert the "difficulty level of an overall project" into the "categories of complexity" of samples of a larger sampling.

There is no objective evidence in Abran itself of this equivalence and the Examiner makes no attempt to address this necessary step in the analysis.

Second, newly-cited Abran clearly demonstrates that effort/costs of software maintenance projects vary considerably and that there is <u>no known model</u> that would provide a reasonably accurate estimate before the project is undertaken, given the data used in this study. Indeed, it becomes clear from the data presented in Abran that it is unknown at this time all of the variables that would be required to arrive at a model that reasonably accounts for the actual costs, even as these costs are known after the project is completed. Whether the method of the claimed invention would provide an improvement over the results used in this study is not known, since there is no data in this study that provides the information expressly defined in the claimed invention, more specifically, the complexity of the code within samples within a larger sampling.

That is, since the data for program efforts in Abran was obtained <u>after</u> the projects were completed, there clearly was no attempt in Abran to develop any initial estimates, let alone any estimates derived in the manner of the other cited references relied upon by the Examiner. The study in Abran is also clearly an academic to attempt to identify variables

that might be significant in arriving at a realistic model to calculate efforts of these projects and, from the results, it appears that overall size of the project and overall project difficulty have some correlation with efforts necessary to execute the software modifications providing the data for this study.

However, overall size and overall project difficulty do not satisfy all of the elements of the claimed invention. Indeed, in reviewing the Abran study results in view of the claimed invention, it is easy to conclude that the sampling of complexity inside the project (e.g., as described by the claimed invention) might be a direction that could be explored that would improve estimates of effort/cost for software projects, since such sampling would provide more objective estimates of effort than a simple characterization of difficulty of the overall project. Therefore, if anything, the inability of newly-cited Abran to be able to reasonably reconcile the data used in its study is strong evidence that the claimed invention is clearly non-obvious.

The Rejections Based on Below

The Examiner alleges that Below, when modified by newly-cited Abran, renders obvious claims 23, 25, 27, 29-30, 32, 35, and 36 and Below, when modified by Ramil, renders obvious claims 9-20 and 38, as well as claims 24, 26, 28, 31, 33, and 34.

Relative to independent claim 23, the Examiner concedes that primary reference Below fails to provide the aspect that computer code be selected and categorized into categories of complexity. To overcome this deficiency, the Examiner relies on newly-cited Abran, pointing to the "project difficulty" described in the 4th and last paragraphs of § 2.3 and a passing reference to § 3.3.2.

In response, Applicants submit that, as discussed above, the academic study described in Abrin is an attempt to discover variables that might reasonably be used to improve accuracy of software effort estimates. The "project difficulty" of Abrin is not obtained by categorizing sample code within the project. Rather, the category is assigned as an indication of the overall difficulty of the overall project after the project has been completed.

Therefore, even if the "project difficulty" variable of Abrin were to be incorporated into the estimation method of Below, this variable would not satisfy the plain meaning of the claim language, since it is not obtained as an estimate of complexity of sampling within the project. Along this line, it is brought to the Examiner's attention that the cost equation of claims 4 and 31 are not based upon difficulty of the overall project.

Rather, these equations are based upon complexity categories as calculated from <u>within</u> the project. This fundamental difference is due at least in part because Abrin is an academic article directed to discussing the variables that might be significant in a cost model, as based on information obtained <u>after</u> the project is completed, but is not directed to the problem of deriving an estimate <u>before</u> the project is undertaken.

Nor does the Examiner even attempt to provide any objective evidence that the "project difficulty" of Abrin would provide the same <u>quantitative</u> result expressly defined in the equation of claims 4 and 31.

Thus, even if Abrin were to be incorporated into Below, the combination would still not teach all of the elements of the claimed invention.

Hence, turning to the clear language of the claims, in Below, even if modified by Abrin, there would be no teaching or suggestion of: "… a graphic user interface <u>to allow said computer code to be selected and categorized into categories of complexity</u> ..., as required by independent claim 23. The same deficiency is present for the evaluation of independent claims 25, 27, and 32.

Relative to the rejection of claims 9-20 and 38, since independent claims 9 and 19 have been amended to reflect categorization of the samples into categories of complexity, this rejection has the same deficiency identified above. Secondary reference Ramil is not relied upon in any manner that reasonably overcomes this deficiency.

Therefore, claims 9-20, 23-36, and 38 are clearly distinguished from Below, even if modified by newly-cited Abran, and the Examiner is respectfully requested to reconsider and withdraw these rejections for these claims.

<u>The Rejection Based on Ramil</u>

The Examiner alleges that claims 1-8, 21, 22, 37, and are rendered obvious over Ramil, further in view of Below and further yet in view of newly-cited Abran.

However, as noted above, newly-cited Abran fails to suggest deriving a complexity measurement from <u>within</u> a project, let alone a complexity derived by sampling code and then extrapolating to the overall project. The Examiner relies upon the variable "project difficulty" that is clearly described in Abran as a category of difficulty of the overall project as based upon completion of the project. There is no objective evidence in Abran that this subjective categorization is related to the complexity of sampled code and this subjective categorization certainly lacks the quantitive requirement expressly defined in the equation of

claims 4 and 31.

Therefore, Applicants submit that there is at least one element that is not demonstrated by the rejection currently of record for claims 1-8, 21, 22, and 37, and the Examiner is respectfully requested to also reconsider and withdraw this rejection.

III.   FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-39 are patentably distinct over the prior art of record and are in condition for allowance and that other claims could be easily placed into condition for immediate allowance.   The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a <u>telephonic or personal interview</u>.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: __ April 8, 2009 __   _____
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<u>CERTIFICATION OF TRANSMISSION</u>

I certify that I transmitted via EFS this Response under 37 CFR §1.111 to Examiner B. Wang on April 8, 2009.

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